

Outpatient Physical Therapy Mitigates Persistent Post-Covid-19 Symptoms: Retrospective Evaluation of Endurance, Function & Health Status

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Abstract

Purpose/Hypothesis: To date, the coronavirus-2019 (COVID-19) pandemic has led to countless infections and deaths. In individuals with post-COVID-19 condition, persistent physical and psychological impairments can manifest up to several months after recovering from the acute infection. Common long-term impairments include persistent fatigue, decreased exercise capacity, dyspnea upon exertion, difficulty with ambulation, reduced lung function and potential neurological involvement. Outpatient physical therapy including breathing and functional mobility exercises may be able to address some of these impairments, however, its effects on mental and physical health, quality of life and functional performance measures are less known.

Purpose: This retrospective cohort study aimed to examine changes in muscular endurance, functional status, physical and mental health status and COVID-19-specific quality of life following outpatient physical therapy rehabilitation in patients with post-COVID-19 symptoms.

Number of Subjects: 15

Materials and Methods: Admission and discharge data was retrospectively extracted from records of patients who received usual care at an outpatient physical therapy clinic in Provo, Utah between August 2020, and June 2021. Measures included muscular endurance assessed by 1-minute sit-to-stand test; functional status change, risk-based predicted functional improvements and predicted number of visits assessed using the Focus on Therapeutic Outcomes (FOTO) Inc. system; and self-reported physical and mental health status, and quality of life assessed by the PROMIS physical, mental, and satisfaction with social roles scores, and the COVID-19-specific quality of life questionnaires. Interventions included respiratory exercises, aerobic training, upper and lower extremity strength training, balance and gait training, and general mobility exercises. Data was analyzed using dependent t-tests for each outcome measure.

Results: Records from fifteen individuals were included in the final analysis. Significant improvements ($p < 0.05$) were noted in muscular endurance (effect size, $ES = 1.31$), functional status ($ES = 0.74$), and PROMIS scores for physical health ($ES = 0.56$), mental health ($ES = 0.59$), and satisfaction with social roles scores ($ES = 0.89$) after receiving outpatient physical therapy. Individuals achieved the FOTO-predicted functional improvements in a lower number of visits ($p < 0.001$, $ES = 2.74$) compared to the national average.

Conclusions: This study demonstrated significant and meaningful improvements in muscular endurance, function, physical and mental health status, and quality of life in individuals with post-COVID-19 infection, providing evidence for the role of targeted physical therapy in an outpatient setting.

Clinical Relevance: Understanding both, the long-term physical and psychological impact of COVID-19 infection and the role of physical therapy can improve the clinical care for individuals experiencing persistent post-COVID-19 symptoms. The results of this retrospective study can allow clinicians to proactively assess for

and treat common post-infectious impairments that would otherwise decrease function and overall quality of life in these individuals.

Key Words: *Physical therapy, Covid-19*